constituents in the two groups was in exact proportion to the machine-smoked yields of the two types of product. This means that any long-term benefits from switching to a low-tar cigarette are better than the hitherto published short-term switching studies would suggest—provided that any dose-response relationship between "disease" and "tar" intake regresses toward zero, and cigarette consumption does not increase.

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Alcohol-dependent doctors

SIR,—The high susceptibility of doctors to alcoholism (leading article, 11 August, p 351) is reflected in the findings of a fairly steady percentage of 2-4% of doctors among male alcoholic admissions to the alcoholic units at Warlingham Park Hospital and St Bernard's Hospital over a 25-year period (1952-77).[1 2]

Unfortunately, as you say in your editorial, most alcoholic doctors present late for treatment and usually only under considerable pressure from their families, their medical partners, etc. Yet when treated in a therapeutic community they more often than not prove very co-operative patients, participating actively in treatment, taking a leading role in helping fellow patients, and showing an active interest in follow-up activities; they only rarely discharge themselves prematurely against advice, and their prognosis is by no means bad.[1 2] One of the most hopeful developments in this field in this country (as in the USA) has been the formation, over five years ago, of the British Doctors Group for recovering alcoholics.

A questionnaire survey recently undertaken by members of the group elicited 59 replies (50%) from 120 doctors to whom the questionnaire had been mailed.[3] The replies indicated that, out of 56 returning fully completed questionnaires, 37 doctors had been "sober" (that is, fully abstaining from alcohol and psychotropic drugs) for a mean period of 4·1 (range 1-26) years. Of these 37 doctors, 28 (76%) stated that they had in the past tried, unsuccessfully, to control their drinking. Thirty-one (84%) had received inpatient treatment at some stage, 20 (54%) of them in an alcoholism treatment unit. With two exceptions among the 37 doctors, the great majority regularly attended either Alcoholics Anonymous meetings or local after-care facilities, or both.

In theory there is no reason why prognosis in the case of alcoholic doctors should not be reasonably good, once they can be motivated to face up to their problems. Prognosis in alcoholism depends mainly on emotional and social stability of the personality; the majority of medical men surely have a relatively stable personality, and it is probably largely environmental rather than emotional factors which are responsible for the majority of cases of alcoholism among medical men. Continual excessive emotional and physical demands, frustrations, the need to relax after working hours, etc. may prompt many doctors to rely more and more on the familiar comforter of their student days.[1] Education about alcohol problems is the more important for medical students for many of whom unfortunately medical schools often appear to be "excellent training grounds for the drinking habit."[4] But in general doctors have been taught so little about the early stages of alcoholism that many still do not suspect the condition until they are confronted with its physical complications; and quite a few alcoholic doctors tell one that they had felt they could not possibly be alcoholics because, after all, they were not spending most of their days dead drunk in the gutter.

The outcome of the still-prevailing laisser-faire attitude to education and the early diagnosis and treatment of alcoholic doctors will be many more avoidable cases of dead doctors and perhaps also dead patients. Alcoholism is, or should be, to a large extent a preventable disorder particularly among doctors. From our own experiences in the teaching of medical students about the early stage of alcoholism over the past 20 years, it would seem that such teaching should present no difficulties and that students quickly begin to take an interest in this increasing socio-medical problem and its victims.

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Tetraplegia caused by gymnastics

SIR,—Within a period of a month two teenage girls have been admitted under my care with fracture dislocations of the cervical spine resulting in tetraplegia. Both injuries had been caused while the girls were participating in gymnastics. The first, aged 13, suffered her neck injury while trampolining; and the second, aged 14, while practising asymmetrical bar exercises to take part in first-class competition.

These are otherwise rare injuries and I wonder whether these tragic accidents are chance occurrences or the first of a trend brought about by the great interest taken in gymnastics by young girls at present. I would be interested to know if any of your readers have had similar experiences.

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Nutritional standards and saving money on school meals

SIR,—There is much current discussion on the possibility of saving public money from the education budget by changes in school meals and questions have been raised about lowering the nutritional standards. One suggestion is that savings may result from altering the type of meal from the traditional "meat-and-two-veg" to sandwiches and soup. In measuring any change in nutritional content one question is whether we are using the standards laid down by the Department of Education and Science or comparing the meals with what is currently being supplied to the children.

Nutritional guidelines state that children in each age group should be served with a minimum of one-third of their recommended daily intake of energy and 42% (between one-third and a half) of their recommended daily intake of protein.[1] This would result in the targets shown in table I. However, a thorough examination of 12 schools in one area[2] showed that this target was almost never reached (table I). For the younger children, presumably those at greatest risk, the amount of food supplied (energy) reached only two-thirds of that recommended—and this without taking into consideration any left on the plate.

TABLE I—*Nutritional targets and achievements in school meals*[2]

Type of school	Energy		Protein	
	Target (MJ*)	Achievement (%)	Target (g)	Achievement (%)
Infant	2·5	65	19	76
Infant and Junior	2·9	76	22	77
Junior	3·1	70	23	74
Middle	3·6	86	27	81
Senior	3·7	95	28	86

*1 MJ ≈ 239 kcal.

Similar figures were obtained in an earlier cross-sectional survey of 48 schools.[3] This used the guidelines suggested at that time, which were not very different from current recommendations, although not stated so precisely and therefore open to various interpretations by the caterers in charge of menu planning and purchasing.

These figures showed that 63-75% of the energy target and 55-61% of the protein target were achieved in various age groups. Another survey[4] showed similar shortfalls. These meals were very varied in composition but basically of the traditional pattern of meat with two vegetables or fish and chips or salads, followed by puddings of various types (often rich in sugar).

Now the problem arises when we consider whether snack meals or sandwiches will result in a reduction of energy and nutrients supplied. Do we use the recommended guidelines or the amounts that are in practice being supplied (at least in three areas)?

Soups and sandwiches can be of many types, depending on the skill of the mother or caterer who is supplying them; but for the purposes of comparison we could take a lentil soup as analysed in the standard food tables[5] and cheese and bread (amounts would obviously vary with thickness, etc). Table II shows that this can be as good as any traditional type of meal. If sandwiches and soup are cheaper to provide, then there is no need to change nutritional guidelines.

TABLE II—*Energy and protein content of soup and sandwiches*

	Energy (MJ*)	Protein (g)
Two cheese sandwiches		
Bread (4 slices = 100 g)	1·0	8
Cheese (1 oz = 30 g)	0·6	8
Lentil soup (7 fl oz = 200 g)	0·8	9
Total	2·4	25

*1 MJ ≈ 239 kcal.

Guidelines are not laid down for other nutrients but should reach one third of the recommended daily intake. Our first survey[3] showed that the meals offered supplied 2·3 to 4·3 mg iron and 160-200 mg calcium, and included 20-25 g sugar (one particular meal supplied 80 g of sugar (1·3 MJ; 320 kcal), or about 40% of the energy target for the entire meal). Our second survey[2] showed adequate supply of nutrients—38-75% of the total daily recommended intake of vitamin C, 16-30% thiamin, 24-29% iron, and 26-49% calcium. These figures were calculated and analysed figures were much lower for vitamin C.

What is often lost sight of is that individuals, including children, vary enormously in their energy needs, and while this is taken care of to some extent in some schools by offering "seconds" or different sizes of portions this is not true of all schools that we examined—in some areas second helpings were not permitted and in others the same quantity was provided whatever size was requested. In view of these differences in requirements, not to mention daily fluctuations in appetite, it is possible that a cafeteria type of service offering a choice of foods and portions may be helpful, apart from any saving in staff.